Improving Water Quality Assessment and Monitoring

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Recent Critiques

- Reports find monitoring inadequate
  - GAO, National Academy of Science, National Academy of Public Administration, and others
    - States do not have data needed to make decisions
      - Set water quality standards
      - Determine protection and clean up goals
      - Evaluate effectiveness of permits and management measures
    - EPA and States cannot make statistically valid statements about water quality condition in U.S.

Monitoring Challenges

- Current focus on targeted monitoring
  - Assess limited percentage state waters and water body types (19% rivers and streams, 43% lakes, 36% estuaries, 4% wetlands)
- Data generally not comparable across states and over time
- Limited ability to demonstrate effectiveness
  - Of program actions and resource allocations
- Complex technical issues

Monitoring Challenges (cont)

- Many State priorities unmet
  - Water quality standards
  - TMDLs
  - NPDES permits
- Resource needs are large
  - Annual gap of $100-150 million for state monitoring efforts
    - EPA/State GAP analysis, 2002
      - Peer-reviewed by National Academy of Public Administration
    - ASIWPCA Monitoring Programs Survey, 2003

Vision for the Future

- We have adequate monitoring data to assess water quality and make sound management decisions
- Actions we take to protect and restore water quality maximize benefits and minimize costs

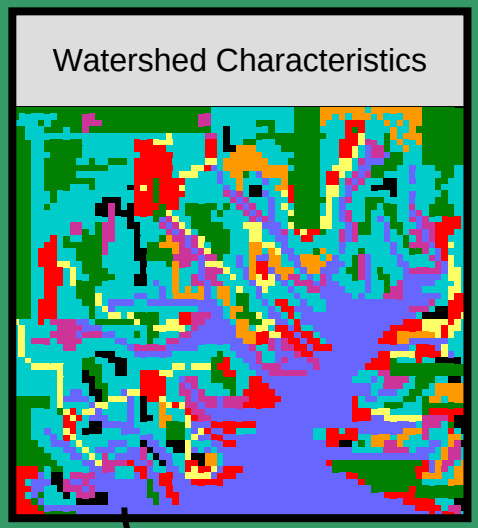
Strategy for Achieving the Vision

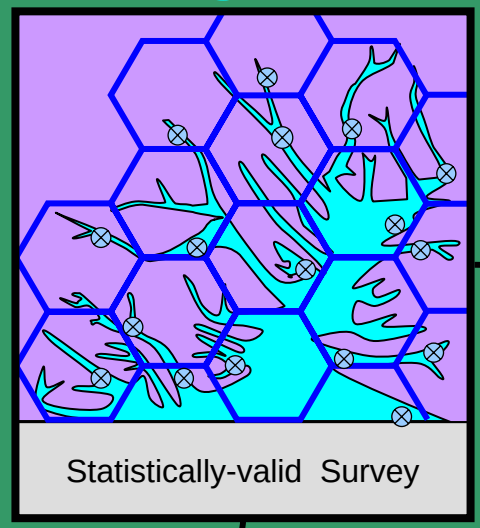
- Strengthen State, Tribal and Interstate monitoring and assessments
- Support collaboration to produce statistically-valid assessment of nation's waters
- Expand accessibility and use of data
- Promote partnerships

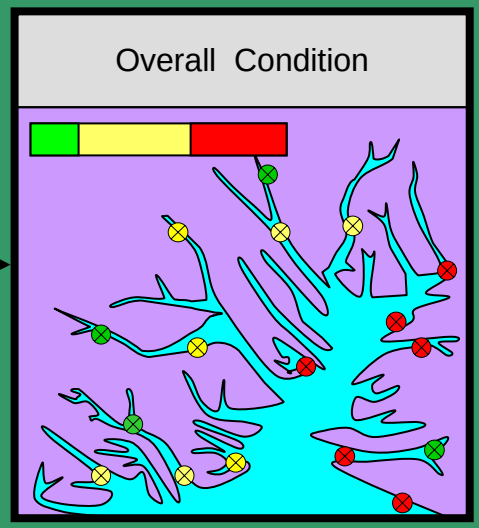
Strengthen State Programs

- Invest in State monitoring programs
  - President's FY05 budget requests $17 million for grants to states
- Develop State monitoring strategies
  - Long term comprehensive plans & short term milestones to address priorities
- Share examples of streamlining and efficiency
  - Partnerships to leverage resources
  - Integration of monitoring & assessment tools to cost-effectively address priorities

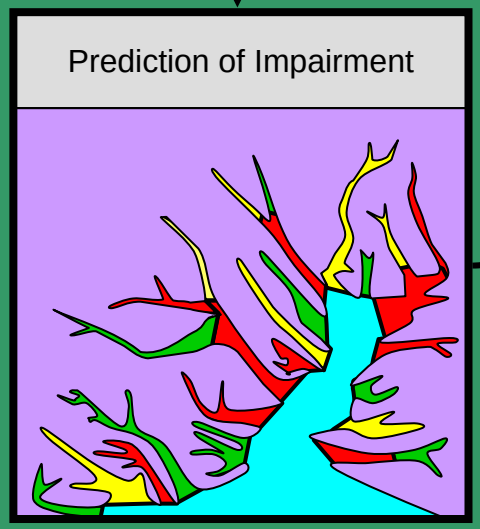
Streamlined Monitoring – Using the Tools Together

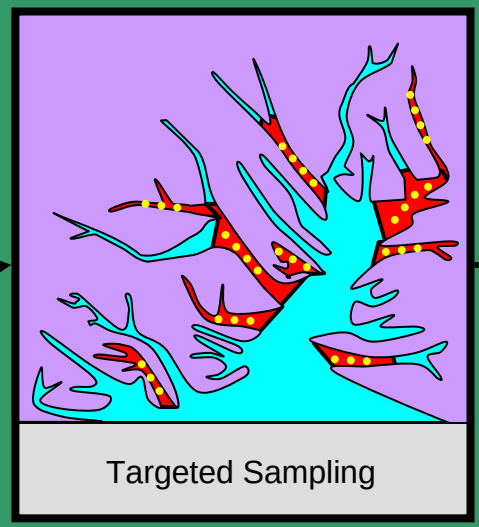


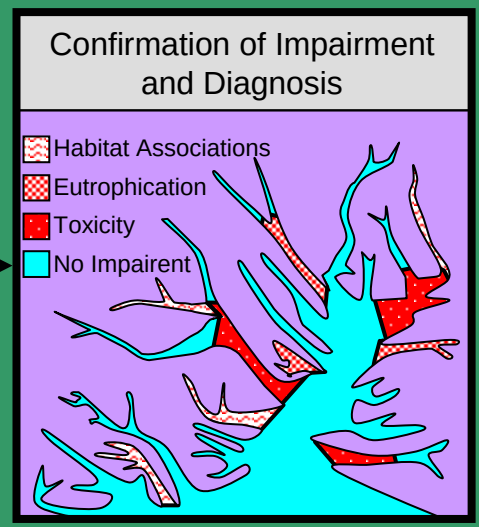




Landscape Indicator Models



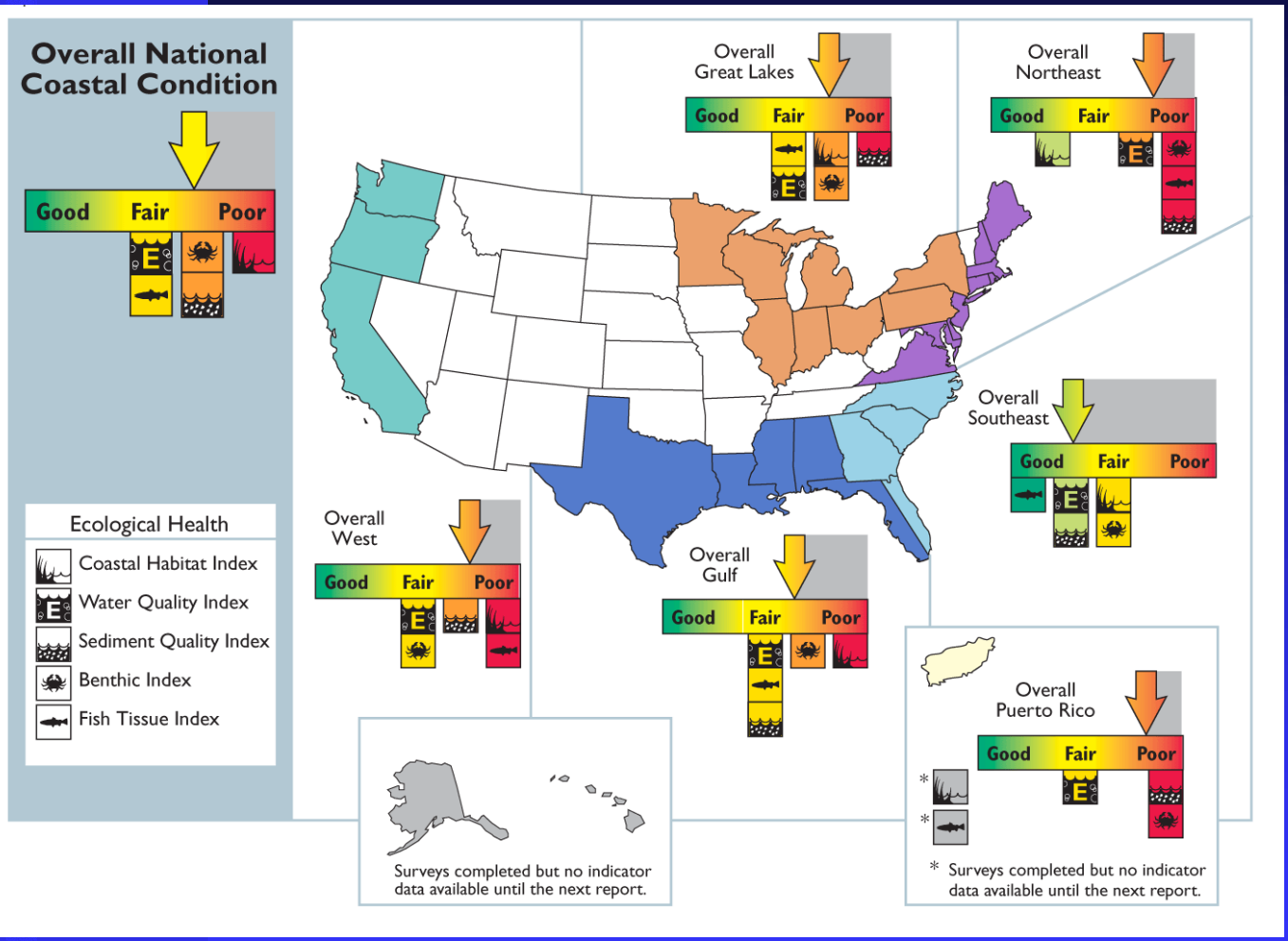




Support Collaboration to Assess Waters

- Examples include:
- National Coastal Condition Report
- Lake Fish Tissue Study
- Wadeable Streams Assessment

National Coastal Condition Report



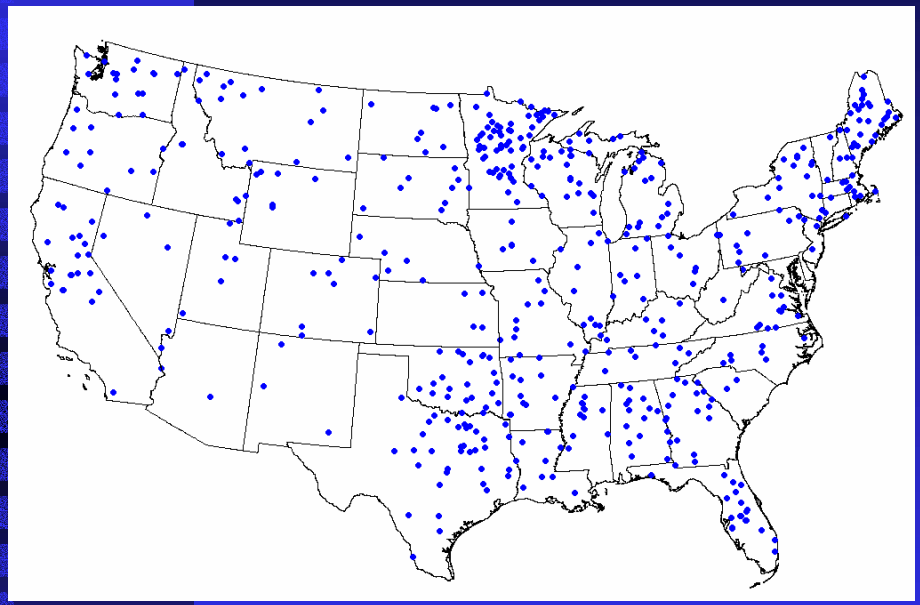
All coastal states and Puerto Rico participated in monitoring.

Data support assessments at national, regional, state and local scales.

Strong support among states to continue partnership.

National Lake Fish Tissue Study

500 Sampling Locations



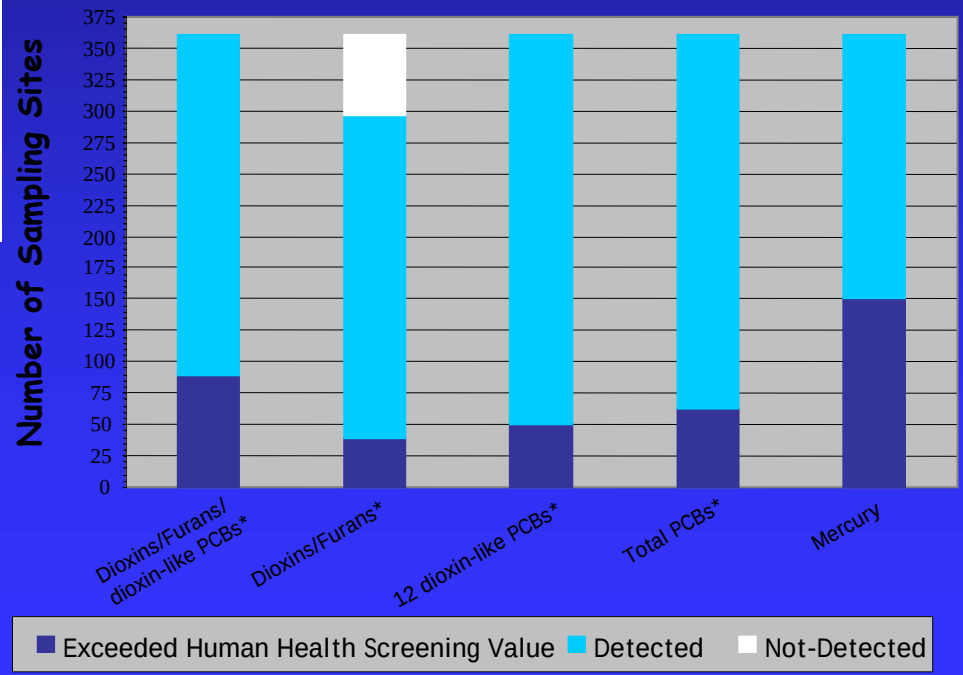
Objectives

- Define first national baseline for largest set of persistent, bioaccumulative, and toxic (PBT) chemicals ever studied in fish
- Assess condition of U.S. lakes and reservoirs based on probability sampling

Scope

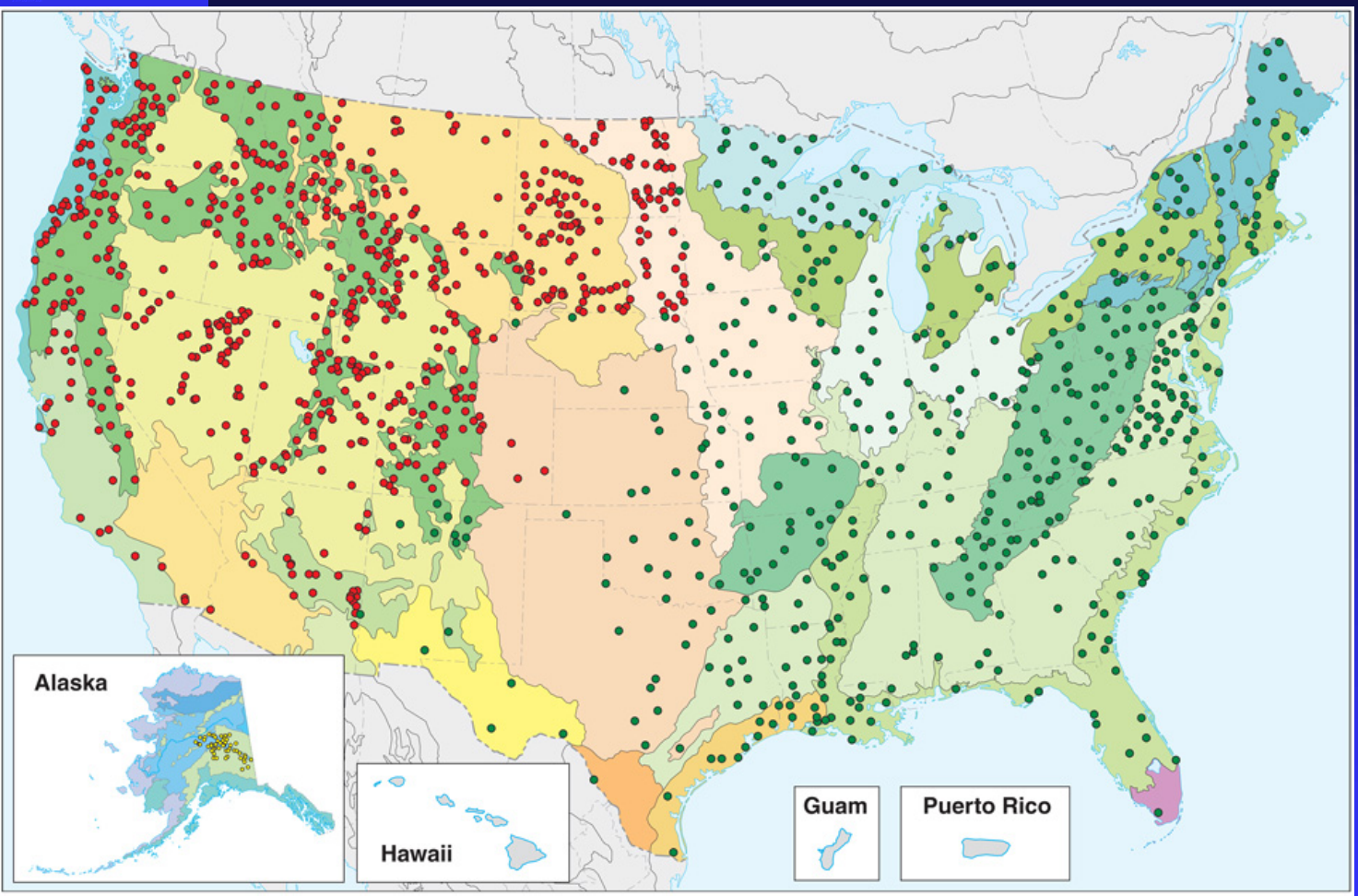
- 500 randomly selected lakes sampled in contiguous U.S. from 2000 to 2003
- Analytical results for 268 PBT chemicals
- Participation by 47 States, 3 Tribes, 10 EPA Regions, and 2 other Federal Agencies

Preliminary Predator Data (Yrs 1-3)



*Zero for non-detected analytes; sum of congeners for PCBs

Wadeable Streams Assessment



Generate status report on the condition of streams of the U.S.

Build State capacity for monitoring and assessment.

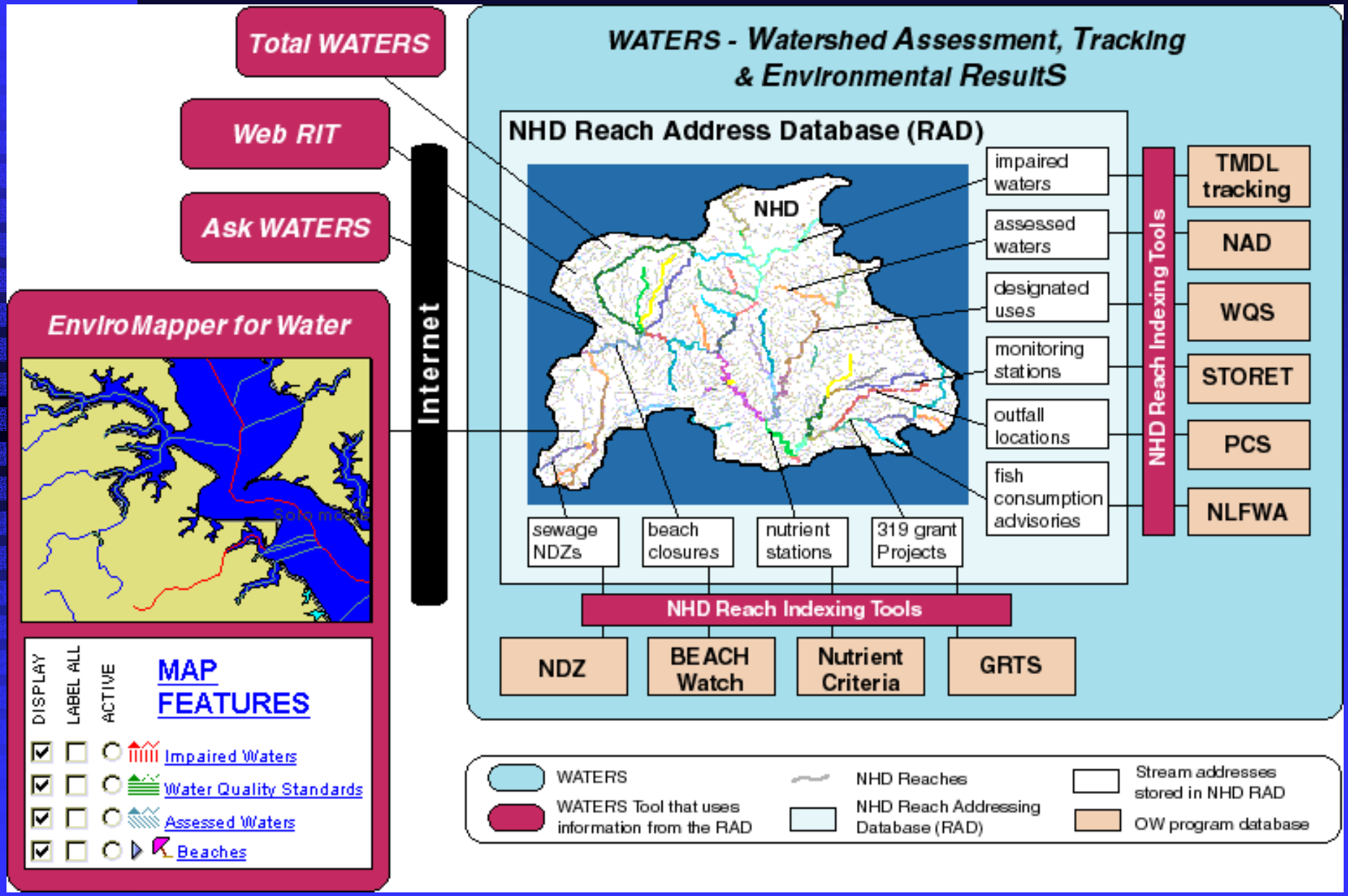
Enhance data comparability and integration of State programs.

The States Assess the Nation's Streams

Expand Accessibility and Use of Data

- EPA's STORET water quality database
  - Free database and user support for States and others to save, share and archive data
    - New warehouse provides quick access to quality data
  - New simultaneous display of sampling data from both STORET and USGS' NWIS
- EPA's WATERS
  - Integrates water data and information from multiple sources
  - Uses GIS to support data analysis and interpretation

WATERS


Total WATERS
Web RIT
Ask WATERS
Internet
EnviroMapper for Water
DISPLAY
LABEL ALL
ACTIVE
MAP FEATURES
Impaired Waters
Water Quality Standards
Assessed Waters
Beaches
WATERS - Watershed Assessment, Tracking & Environmental ResultS
NHD Reach Address Database (RAD)
NHD
impaired waters
assessed waters
designated uses
monitoring stations
outfall locations
fish consumption advisories
sewage NDZs
beach closures
nutrient stations
319 grant Projects
NHD Reach Indexing Tools
TMDL tracking
NAD
WQS
STORET
PCS
NLFWA
NHD Reach Indexing Tools
NDZ
BEACH Watch
Nutrient Criteria
GRTS
WATERS
WATERS Tool that uses information from the RAD
NHD Reaches
NHD Reach Addressing Database (RAD)
Stream addresses stored in NHD RAD
OW program database

Promote Partnerships

- EPA, Federal and State collaborations
  - Surveys of national water condition
  - Use of multiple monitoring tools
- National Water Quality Monitoring Council
  - Sharing innovations and improving consistency
    - Federal, State, private sector & academia
- State/Regional monitoring consortia
  - Citizens, municipal managers, industry, agriculture demonstrate opportunity for improving the efficiency of monitoring for local solutions
- Volunteer Monitoring organizations